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10/797,379	03/10/2004	Carolyn Taylor	CS23811RL	3235

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EXAMINER	
KAO, WEI PO ERIC	

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/797,379	TAYLOR ET AL.	
	Examiner	Art Unit	
	WEI-PO KAO	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 8, 12 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejection - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 5, 6, 8, 9, 10, 12, 13, 14, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al, U.S. Patent No 7263064 in view of Tong et al, U.S. Publication No 20010033560.

Regarding Claims 1 and 8, Yoshimura et al teach that **a method in a packet switched data transfer system for processing header bits and payload bits in a frame of bits, the method comprising** (see Abstract, Figures 3, 10): **classifying each of the header bits and the payload bits in a frame into a first predetermined class of bits or into a second predetermined class of bits** (see Figure 3 Elements 301 and 302, Column 3 Line 63-67, Column 4 Line 1-4 65-67, Column 5 Line 1-7, Column 6 Line 27-42 i.e. a packet/frame, is classified and put into either a real time queue, which may holds packets containing information such as voice, or a data queue; since each packet must contain at least a header and a payload, when the packet is classified, the header and payload are also classified, therefore each of the header bits and payload bits is also classified); **processing the first predetermined class of bits in accordance with a first predetermined mechanism; and processing the second predetermined class of bits in accordance with a second predetermined mechanism** (see Figures 3 and 10 Elements 303 and 306, Column 4 Line 4-21, Column 6 Line 43-67, Column 7 Line 1-6, Column 9 Line 54-67 i.e. packets are divided at each respective real time queues and data queues and scheduled to be transmitted according to QoS, which decides either a real time data-unit or a data data-unit is sent). However, Yoshimura et al do not teach that **the method comprising: classifying each of the header bits and the payload bits in the frame into a first predetermined class of bits and into a second predetermined class of bits; processing the first predetermined class of bits, in the frame, in accordance with a first predetermined mechanism; and processing the second predetermined class of bits, in the frame, in accordance with a second predetermined mechanism.** Tong et al from the same field of endeavor teach that **the method** (see Abstract, Figures 3, 5, 7, 10 and 11, [0014-0016] [0040] i.e. consider the following

combination: implement the modules in figures 3 or 10 from Yoshimura in series with the modules in figures 10 or 11 of Tong's invention, namely after a packet/frame/subframe is classified and divided as disclosed in Yoshimura, the classified-divided data-units are scheduled to send to the MUX, Tong, figure 10 element 1002 or figure 11 element 1104, to be processed to construct a superframe) **comprising: classifying each of the header bits and the payload bits in the frame into a first predetermined class of bits and into a second predetermined class of bits** (see Figures 3 and 7, [0045] [0052-0053] [0057-0058] [0071] i.e. following the same rationale established above, namely each packet/frame/subframe must contain at least a header and a payload, when the subframe is classified into either a real time or data class, the header and payload are also classified, therefore each of the header bits and payload bits of a subframe is also classified, after the subfrarmes are divided, classified, scheduled and processed to become a superframe, each of the header bits and payload bits in the superframe is classified into a first predetermined class of bits, data, and a second predetermined class of bits, voice)**; processing the first predetermined class of bits, in the frame, in accordance with a first predetermined mechanism; and processing the second predetermined class of bits, in the frame, in accordance with a second predetermined mechanism** (see Figures 10 and 11, [0082-0085] [0089] i.e. since voice and data may require different data rates, different encoding and rate matching are required)**.** At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the classifying, dividing and scheduling modules from Yoshimura in series with the superframe construction modules Tong's invention. The motivation to combine would have been that by first classifying the incoming frames, minimal

delay of the real-time/voice information can be achieved while maintaining the reliability of the data information (see Yoshimura et al, Column 3 Line 27-33).

Regarding Claims 2 and 9, Tong et al further teach that **the method, further comprising: constructing a new frame of bits based upon the processed first predetermined class of bits and the processed second predetermined class of bits** (see [0013-0016] [0082] [0089] i.e. a superframe is constructed based upon the data and voice information)**.** At the time of the invention, it would have been obvious to a person ordinary skill in the art to construct a superframe contains both data and voice information. The motivation to combine would have been that it is desired to provide a communication system that is capable of carrying both delay sensitive lower data rate voice communications and delay tolerant higher data rate data communications with minimal waste of spectral capacity.

Regarding Claim 5, Yoshimura et al and Tong et al teach all the limitations in claim 1 as disclosed in this paragraph except that **the method of, wherein processing the first/second predetermined class of bits in accordance with the first/second predetermined mechanism includes grouping the first/second predetermined class of bits.** For Claim 5, Yoshimura et al teach that **the method of, wherein processing the first/second predetermined class of bits in accordance with the first/second predetermined mechanism includes grouping the first/second predetermined class of bits** (see Column 3 Line 27-42)**.**

Regarding Claims 6 and 10, Yoshimura et al teach that **the method of, further comprising: grouping the processed first predetermined class of bits; grouping the processed second predetermined class of bits** (see Column 3 Line 27-42). However, for Claims 6, 10, Yoshimura et al do not teach that **constructing a new frame of bits based upon the grouped-processed first predetermined class of bits and the grouped-processed second predetermined class of bits.** Tong et al further teach that **the method, further comprising: constructing a new frame of bits based upon the processed first predetermined class of bits and the processed second predetermined class of bits** (see [0013-0016] [0082] [0089] i.e. a superframe is constructed based upon the data and voice information). At the time of the invention, it would have been obvious to a person ordinary skill in the art to construct a superframe contains both data and voice information. The motivation to combine would have been that it is desired to provide a communication system that is capable of carrying both delay sensitive lower data rate voice communications and delay tolerant higher data rate data communications with minimal waste of spectral capacity.

Regarding Claim 12, Yoshimura et al teach that **a method in a packet switched data transfer system for reformatting a frame having header bits and payload bits, the method** (see Abstract, Figures 3, 10) **comprising: classifying the each of the header bits and payload bits in a frame into a first predetermined class of bits or into a second predetermined class of bits** (see Figure 3 Elements 301 and 302, Column 3 Line 63-67, Column 4 Line 1-4 65-67, Column 5 Line 1-7, Column 6 Line 27-42 i.e. a packet/frame, is classified and put into either a real time queue, which may holds packets containing information such as voice, or a data queue;

since each packet must contain at least a header and a payload, when the packet is classified, the header and payload are also classified, therefore each of the header bits and payload bits is also classified); **grouping the classified header bits of the first predetermined class of bits with the classified payload bits of the first predetermined class of bits; grouping the classified header bits of the second predetermined class of bits with the classified payload bits of the second predetermined class of bits** (see Figures 3 and 10 Elements 303 and 306, Column 3 Line 27-42, Column 4 Line 4-21, Column 6 Line 43-67, Column 7 Line 1-6, Column 9 Line 54-67 i.e. packets are divided at each respective real time queues and data queues and scheduled to be transmitted according to QoS, which decides either a real time data-unit or a data data-unit is sent). However, Yoshimura et al do not teach that **the method comprising: classifying each of the header bits and the payload bits in the frame into a first predetermined class of bits and into a second predetermined class of bits; and constructing a reformatted frame using the grouped first predetermined class of bits and the grouped second predetermined class of bits.** Tong et al from the same field of endeavor teach that **the method** (see Abstract, Figures 3, 5, 7, 10 and 11, [0014-0016] [0040] i.e. consider the following combination: implement the modules in figures 3 or 10 from Yoshimura in series with the modules in figures 10 or 11 of Tong's invention, namely after a packet/frame/subframe is classified and divided as disclosed in Yoshimura, the classified-divided data-units are scheduled to send to the MUX, Tong, figure 10 element 1002 or figure 11 element 1104, to be processed to construct a superframe) **comprising: classifying each of the header bits and the payload bits in the frame into a first predetermined class of bits and into a second predetermined class of bits** (see Figures 3 and 7, [0045] [0052-0053] [0057-0058] [0071] i.e. following the same rationale established above,

namely each packet/frame/subframe must contain at least a header and a payload, when the subframe is classified into either a real time or data class, the header and payload are also classified, therefore each of the header bits and payload bits of a subframe is also classified, after the subfrarmes are divided, classified, scheduled and processed to become a superframe, each of the header bits and payload bits in the superframe is classified into a first predetermined class of bits, data, and a second predetermined class of bits, voice); **and constructing a reformatted frame using the grouped first predetermined class of bits and the grouped second predetermined class of bits** (see [0013-0016] [0082] [0089] i.e. a superframe is constructed based upon the data and voice information). At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the classifying, dividing and scheduling modules from Yoshimura in series with the superframe construction modules Tong's invention. The motivation to combine would have been that by first classifying the incoming frames, minimal delay of the real-time/voice information can be achieved while maintaining the reliability of the data information (see Yoshimura et al, Column 3 Line 27-33).

Regarding Claim 13, Tong et al further teach that **the method, further comprising: before constructing a reformatted frame, encoding the grouped first predetermined class of bits with a first predetermined algorithm; and encoding the grouped second predetermined class of bits with a second predetermined algorithm, wherein constructing a reformatted frame includes constructing a reformatted frame using the encoded grouped first predetermined class of bits and the encoded grouped second predetermined class of bits** (see Figures 10 and 11, [0013-0016] [0045] [0082] [0089]). At the time of the invention, it

would have been obvious to a person ordinary skill in the art to encode different classified data, voice and data, with different data rate. The motivation to combine would have been that it is desired to provide a communication system that is capable of carrying both delay sensitive lower data rate voice communications and delay tolerant higher data rate data communications with minimal waste of spectral capacity.

Regarding Claim 14, Tong et al further teach that **the method, wherein the first predetermined algorithm has a first coding rate greater than a second coding rate of the second predetermined algorithm** (see [0013-0016] [0045] [0084]). At the time of the invention, it would have been obvious to a person ordinary skill in the art to encode different classified data, voice and data, with different data rate. The motivation to combine would have been that it is desired to provide a communication system that is capable of carrying both delay sensitive lower data rate voice communications and delay tolerant higher data rate data communications with minimal waste of spectral capacity.

Regarding Claims 15 and 19, they are apparatus claims corresponding to the method claims 1 and 2, and therefore rejected under the same reason set forth in the same section of claims 1 and 2 in this paragraph.

6. Claims 3, 4, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al, U.S. Patent No 7263064 and Tong et al, U.S. Publication No 20010033560 as applied to claim 1 above, and further in view of Kloth U.S. Patent No 6598034.

Regarding Claim 3 and 4, Yoshimura et al and Tong et al teach all the limitations in claim 1 except that **the method, wherein: classifying the data bits into the first predetermined class of bits and into the second predetermined class of bits includes classifying data bits based upon a location of the data bits in the frame of bits; and classifying the data bits into the first predetermined class of bits and into the second predetermined class of bits includes classifying the data bits based upon pre-assigned weight of the data bits in the frame of bits.** Kloth from the same field of endeavor teaches that **the method, wherein: classifying the data bits into the first predetermined class of bits and into the second predetermined class of bits includes classifying data bits based upon a location of the data bits in the frame of bits** (see Abstract, Column 4 Line 27-61, Column 9 Line 59-67, Column 10 Line 1-9)**; and classifying the data bits into the first predetermined class of bits and into the second predetermined class of bits includes classifying the data bits based upon pre-assigned weight of the data bits in the frame of bits** (see Abstract, Column 4 Line 27-61, Column 9 Line 59-67, Column 10 Line 1-9 13-16 i.e. it is convention in the art that higher priority packet is assigned higher weight)**.** At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement Kloth's classification and processing rule to further aid the invention of Yoshimura's. The rationale would have been that it is desired to have user-defined rules to classify various types of data packet which yields flexibility in controlling data flow.

Regarding Claims 16 and 17, they are apparatus claims corresponding to the method claims 3 and 4, and therefore rejected under the same reason set forth in the same section of claims 3 and 4 in this paragraph.

7. Claims 7, 8, 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al, U.S. Patent No 7263064 and Tong et al, U.S. Publication No 20010033560 as applied to claims 1 and 8 above, and further in view of Cucchi et al, U.S. Patent No 5228028.

Regarding Claim 7, Yoshimura et al and Tong et al teach all the limitations in claim 1 except that **the method, wherein the first predetermined mechanism includes applying a first error protection algorithm, and the second predetermined mechanism includes applying a second error protection algorithm.** Cucchi et al from the same field of endeavor teach that **the method, wherein the first predetermined mechanism includes applying a first error protection algorithm, and the second predetermined mechanism includes applying a second error protection algorithm** (see Abstract Line 12-16, Column 6 Line 7-11). At the time of the invention, it would have been obvious to a person ordinary skill in the art to incorporate Cucchi's classification and encoding scheme with Yoshimura's invention to process different type of data packets at different level of detail. The rationale to combine would have been that it is desired to apply different error protection to different types of data to further improve the quality insurance of different data.

Regarding Claim 11, Yoshimura et al and Tong et al teach all the limitations in claim 8 except that **the method of, wherein the first predetermined encoding process has a first coding rate greater than a second coding rate of the second predetermined encoding process**. Cucchi et al from the same field of endeavor teach that **the method of, wherein the first predetermined encoding process has a first coding rate greater than a second coding rate of the second predetermined encoding process** (see Column 5 Line 23-39 54-60). At the time of the invention, it would have been obvious to a person ordinary skill in the art to incorporate Cucchi's classification and encoding scheme with Yoshimura's invention to process different type of data packets at different level of detail. The rationale to combine would have been that with specific encoding rate for specific data, the correctness of data produce is better maintained than applying only one encoding rate to various types of data.

Regarding Claim 18, it is an apparatus claims corresponding to the method claim 18, and therefore rejected under the same reason set forth in the same section of claim 18 in this paragraph.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEI-PO KAO whose telephone number is (571)270-3128. The examiner can normally be reached on Monday through Friday, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/

Supervisory Patent Examiner, Art Unit 2616

/Wei-po Kao/

Examiner, Art Unit 2616